National Agro-meteorological Committee (NAC) Advisory on the 2020/21 spring and summer seasons
Statement from Climate Change and Disaster Risk Reduction
01 DALRRD 2020

28 September 2020

In light of the seasonal climate watch as produced by the South African Weather Service (SAWS), the following advisory guidelines are suggested. It is emphasized that these advisories are broad guidelines and should be interpreted considering the local aspects of the region such as soil types, cultural preferences and farming systems. Depending on the particular region, the prioritization of the guidelines will differ. The basic strategy to follow would be to minimize and diversify risk, optimize soil water availability and to manage the renewable resources (rain water and grazing) to uphold sound farming objectives. Long-term mitigation strategies should be considered by implementing techniques to enhance in-field water harvesting by reducing run-off and improving infiltration. Reduced tillage methods are very important in this regard, as is basin tillage, to capture rainwater in the drier areas. The provinces should further simplify, downscale and package the information according to their language preference and if possible use local media and farmers’ days to disseminate the information. Users are advised to be on the look-out and act on the daily extreme weather warnings as well as the monthly advisory.

I. CURRENT CONDITIONS

![Figure 1: Percentage of Normal Rainfall for July 2020](image1)
Percentage of Normal Rainfall for July 2020
(Based on preliminary data. Normal period 1981-2010)

![Figure 2: Percentage of Normal Rainfall for August 2020](image2)
Percentage of Normal Rainfall for August 2020
(Based on preliminary data. Normal period 1981-2010)

![Figure 3: Percentage of Normal Rainfall for 11-20 September 2020](image3)
Percentage of Normal Rainfall for 11-20 September 2020
(Based on preliminary data. Normal period 1981-2010)

![Figure 4: Percentage of Normal Rainfall for season July 2020 - August 2020](image4)
Percentage of Normal Rainfall for season July 2020 - August 2020
(Based on preliminary data. Normal period 1981-2010)
Near normal rainfall with patches of above normal rainfall was received over the western parts of the country (Figure 1). The remainder of the country received below normal rainfall. In August a similar rainfall trend continued; but the north-eastern parts of Limpopo received above normal rainfall (Figure 2). Mid-September received below normal rainfall; however the western parts of Limpopo received above normal rainfall (Figure 3). For the season July to August 2020, rainfall remained similar to the month of August (Figure 4). However parts of Nelson Mandela Bay of the Eastern Cape received above normal rainfall.

**NDVI map: August 2020 compared to the long-term mean**

The NDVI map for August indicates near normal vegetation conditions over greater parts of the country, with below normal conditions along the Karoo and eastern to northern provinces.

**VCI map: August 2020 compared to the long-term mean**

The VCI map for August indicates poor vegetation conditions over most parts of the country. There are pockets of good vegetation in the Western Cape and Eastern Cape.

(The VCI is a better indicator of water stress than the NDVI).
II. CONDITIONS IN THE PROVINCES DURING AUGUST/SEPTEMBER

Eastern Cape
The province received below normal rainfall. The condition of crops ranges from fair to very poor. However in Mbizana in Alfred Nzo District and Kouga in Sarah Baartman District areas the crop is reported to be in very good condition. All districts reported fair to very poor condition of livestock, except in Nelson Mandela Bay where the condition is good. The condition of cultivated pasture is in reasonable to very poor condition but good in Matatiele, Walter Sisulu, Kouga and Intsika Yethu areas. Natural veld is in good condition in Matatiele but poor to very poor elsewhere. The average level of major dams has decreased as compared to the previous year during the same period (50% in 2020; 53% in 2019).

Free State
Below normal rainfall was received. Conditions have improved slightly in the central and western parts of the province. Water restrictions remain in place in most municipalities. Land preparation for maize, sunflower and beans has been completed especially in the northern and eastern parts. The veld is in poor condition while livestock remains in reasonable condition. However, most farmers are still supplementing their herds through spring until the veld has fully recovered. There were reports of veld fires in various districts. The average level of major dams has decreased as compared to the previous year during the same period (75% in 2020; 79% in 2019).

Gauteng
NIL REPORT.

KwaZulu-Natal
Very dry conditions were experienced over most parts of the province. The drought monitor for August indicates that King Cetshwayo and Ugu Districts remain at minor drought status, with the remainder of the province deteriorating to severe drought status. This is mainly due to the lack of rainfall. Winter season pastures are not exhibiting significant growth and irrigation is being used to keep them alive. Supplementation with licks, hay and silages is ongoing. Summer pastures have yet to show strong signs of spring growth. Winter crops (wheat) in Uthukela District were planted later than normal, even where centre pivot irrigation is used. Germination and growth is good so far. Livestock condition ranges from good, fair to poor. Veld and vegetation condition has been below normal in most areas. There have been reports of veld fires in some areas. The average level of major dams has decreased as compared to the previous year (55% in 2020; 57% in 2019).

Limpopo
The province reported to have received below normal rainfall. Poor grazing conditions have been observed in the communal areas and in areas that did not receive enough rains in the previous summer and are still very dry. The condition of livestock ranges from reasonable to poor. Farmers utilizing irrigation are harvesting winter crops for local markets, while dry land farmers have harvested winter grains. Other districts are still in the process of harvesting late winter grain. Veld fire was reported in Mopani District that resulted in the death of livestock and destroyed grazing land. The average level on major dams has increased to 60% in 2020, as compared to 53% of 2019.

Mpumalanga
Below normal rainfall was received. Crops are in good condition while harvesting is continuing. The veld and livestock condition ranges from good to poor in different districts. The veld condition
is reasonable and poor in other areas. The average level of major dams has slightly increased (67% in 2020; 63% in 2019).

**Northern Cape**
Drought conditions persist over most of the province. Crop farmers are in the production cycle of wheat and lusern. Some areas are preparing land to plant maize at the beginning of the summer season. High value crops such as grapes and pecan nuts are being fertilized. The veld and livestock are in poor condition due to drought and the livestock numbers have continued to decrease. The average level of major dams has increased as compared to the previous year during the same period (68% in 2020; 83% in 2019).

**North West**
Below normal rainfall was received. The veld and livestock conditions range from reasonable to poor. The average level of major dams has increased as compared to the previous year during the same period (64% in 2020; 58% in 2019).

**Western Cape**
NIL REPORT.

Information on level of dams is obtained from the Department of Water and Sanitation
Dam levels as at 2020/09/21

### III. AGRICULTURAL MARKETS

**Livestock domestic markets**
Beef showed strong gains due to strong demand. Sheep market experienced increase due to tightness in supply. It is expected that prices will retain the sideways trend but with further upside in the medium term. Pork and baconer posted strong gains due to good uptake while poultry market remained subdued but it is expected that there will be further gains in the months ahead.

<table>
<thead>
<tr>
<th>Producer prices for selected livestock commodities</th>
<th>Beef</th>
<th>Mutton</th>
<th>Pork</th>
<th>Poultry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open market: Class A / Porker / Fresh whole birds (R/kg)</td>
<td>46.57</td>
<td>88.76</td>
<td>28.84</td>
<td>24.18</td>
</tr>
<tr>
<td>Open market: Class C / Baconer / Frozen whole birds (R/kg)</td>
<td>39.98</td>
<td>66.55</td>
<td>27.28</td>
<td>24.80</td>
</tr>
<tr>
<td>Contract: A2/A3* / Baconer/ IQF (*includes fifth quarter) (R/kg)</td>
<td>46.08</td>
<td>88.45</td>
<td>39.41</td>
<td>23.11</td>
</tr>
<tr>
<td>Import parity price (R/kg)</td>
<td>58.28</td>
<td>94.15</td>
<td>15.77</td>
<td></td>
</tr>
<tr>
<td>Weaner Calves / Feeder Lambs (R/kg)</td>
<td>34.75</td>
<td>42.95</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FNB: 2020/09/18

### IV. SADC REGION
The Famine Early Warning Systems Network (FEWS NET) report issued in September 2020 indicates that in drought-affected areas of Zimbabwe, Mozambique and Madagascar poor households are expected to continue facing Crisis (IPC Phase 3) through January.
outcomes or worse outcomes will most likely continue in conflict areas of DRC and Mozambique. However, in most high producing parts of Zimbabwe, Malawi, Madagascar, and Mozambique, Minimal (IPC Phase 1) and Stressed (IPC Phase 2) outcomes are expected to persist. The indirect impacts of COVID-19 remain significant for many low-income households in urban areas and poor rural communities. Although restrictions were slowly easing in Madagascar, Zimbabwe, and DRC, most poor urban households have lost employment with the closing of some formal and informal businesses. In Mozambique, restriction measures were extended in August. Some urban poor households are likely to relocate to rural areas where the cost of living is relatively lower; however, are expected to continue struggling to access staple food and other basic commodities.

FEWS NET further stated that while staple prices reportedly remained generally stable or decreased in July across Malawi, Mozambique, and Madagascar, they still remain 20 percent or more above average. In Zimbabwe, high inflation continues to drive increases in staple prices. These above-average prices are significantly affecting poor households’ access to food on the market due to low purchasing power. Poor households typically engage in land preparation to earn income for food purchases starting in September. Income-earning opportunities are expected to remain limited in Zimbabwe, Mozambique, DRC, and Madagascar, where COVID-19 restrictions and consecutive droughts have negatively affected incomes for most households who typically provide these opportunities. In addition, in-kind payments through grain are lower than average, following the poor production in parts of Mozambique, Zimbabwe, and Madagascar.

[The Integrated Food Security Phase Classification (IPC) is a set of standardized tools that aims at providing a "common currency" for classifying the severity and magnitude of food insecurity.]

Source: http://www.fews.net/southern-africa

Summary of the reports
Overall, conditions in provinces range from reasonable to poor in terms of crops, veld and livestock. The western parts of the country received good rains during the winter period; however drought persists. Veld fires were reported in Free State, KwaZulu-Natal and Limpopo. The average level of major dams has increased in the majority of provinces.

V. MONTHLY CLIMATE OUTLOOK

Seasonal Climate Watch: October 2020 to February 2021

State of Climate Drivers
The El Niño-Southern Oscillation (ENSO) is currently in a weak La Niña state and the forecast indicates that it will most likely remain and strengthen towards a moderate La Niña state during early- and mid-summer. With this strong likelihood of a moderate La Niña, there are increased chances of above normal rainfall in the summer rainfall areas during the coming summer season.
The multi-model rainfall forecast for late spring (Oct-Nov-Dec) indicates that the eastern parts of the summer rainfall season may start off with below-normal rainfall, with above-normal expected for the rest of the region. During early- and mid-summer (Nov-Dec-Jan; Dec-Jan-Feb) most of the summer rainfall regions are expected to receive above-normal rainfall, with some parts of KwaZulu-Natal very uncertain and even showing signs of below-normal rainfall.
Figure 2 - Minimum and Maximum temperatures

Minimum

Expected Min Temp Conditions for OND 2021
Issued: Sep 2020

Expected Min Temp Conditions for NDJ 2021
Issued: Sep 2020

Expected Min Temp Conditions for DJF 2021
Issued: Sep 2020

Maximum

Expected Max Temp Conditions for OND 2021
Issued: Sep 2020

Expected Max Temp Conditions for NDJ 2021
Issued: Sep 2020

Expected Max Temp Conditions for DJF 2021
Issued: Sep 2020
Most of the country is expected to experience above-normal temperatures during late spring, however significant areas over the central parts of the country are expected to have below normal maximum temperatures during early- and mid-summer.

In summary, above normal rainfall is anticipated over most summer rainfall areas towards early to mid-summer with uncertainty in some areas of KwaZulu-Natal leaning towards below normal rainfall. Temperatures are expected to be above normal but early to mid-summer can expect cooler than normal temperatures over the central regions. Farmers are encouraged to continually check updates i.e. seasonal forecasts and utilize 7 day weather forecasts for short term planning.

With the above forecast in mind, the following strategies are recommended:

VI. **SUGGESTED STRATEGIES**

A. **Rain-fed crop production**

**Soil choice**

- Choose suitable soil type.
  - Suitable soil and land use management practices that would control wind and water erosion in cultivated lands are suggested.
  - Avoid marginal soils - shallow and low water holding capacity soils.
  - Rather plant in soils with high water holding capacity or with shallow water table.
- Ascertain that the soil profile has enough water when planting commences.
- Roughen the soil surface to enhance rain water penetration and reduce runoff.
- Minimise compaction by reducing the passing of heavy machinery in the field.
- Add organic material to improve soil structure.

**Land preparation**

- Avoid where possible soils with pronounced plough pans.
- Consider practicing conservation agriculture such as zero or minimum tillage.
- Cover soil with organic matter or cover crops.
- Practice crop rotation.
- Do not expand land under crop production unnecessarily.
- Prioritise fallow land.

**Crop choice and planting**

- Choose drought resistant cultivars.
- Provide flexibility and diversification.
- Rather plant early in the season than late, but stay in the normal planting window and follow the weather and climate forecast regularly so as to make informed decisions.
- Consider staggered planting - spreading over weeks.
- Do not experiment with new and unknown cultivars and also avoid unnecessary capital investments.
- Consider intercropping for improved soil structure and pest/diseases control.
- Planting in a controlled environment (e.g. green house) is advisable where possible.
Crop management

- Adjust planting density accordingly.
- Consider mulching to minimize evaporation.
- Control weeds regularly.
- Consider a conservative fertilizing strategy during dry conditions.
- Consider organic fertilization.
- Scout for pests and diseases regularly and control where necessary.
- Practice water harvesting techniques e.g. construction of basins, contours, ridges.

B. Irrigation farming

- Remove all weeds containing seeds, but keep other vegetative rests on the land because that will reduce evaporation.
- Check and repair all tools and machinery especially where there are water leaks.
- Be aware of the state of regional water resources and whether it will be adequate for irrigation.
- Timing of irrigation - rather late afternoon or early evening to reduce evaporation.
- Manage irrigation so that the plant receives water only when needed.
- Consider using drip irrigation as it saves water by allowing it to drip slowly straight to the roots.
- Avoid over irrigation because that can create problems e.g. water logging and diseases.
- Adhere to water restrictions when issued.

C. Domestic and home garden water use

- Conserve existing water supplies.
- Eradicate water weeds.
- Limit water waste and losses.
- Repair leaking pipes.
- Re-use water and retain high quality.
- Harvest water during rainy days.

D. Stock farming

- Keep stocking rates conservative and even lower to protect grazing.
- Never exceed carrying capacity of plant associations.
- Provide lots of drinking points where possible.
- Provide additional fodder and enhance nutritional value of dry grazing/feed with licks:
  - Phosphorous deficiency is a major problem.
  - Licks should (in most cases) provide:
    - Phosphorous.
    - Urea (to help with the break-down of dry vegetation).
    - Salt.
    - Molasses.
- Deficiencies differ according to vegetation composition/soil properties/climate.
- Analysis of vegetation/soil samples can benefit the decision for supplement composition.
• Sell mature, marketable animals (to help prevent overstocking/overgrazing).
• If grazing is in danger, herd animals into pens where different animals can be segregated and fed separately.

E. Grazing

• Subdivide your grazing area into camps of homogeneous units (in terms of species composition, slope, aspect, rainfall, temperature, soil and other factors) to minimise area selective grazing as well as to provide for the application of animal management and veld management practices such as resting and burning.
• Determine the carrying capacity of different plant associations.
• Calculate the stocking rate of each, and then decide the best ratios of large and small animals, and of grazers or browsers.
• Provide periodic full growing-season rests (in certain grazing areas) to allow veld vigour recovery in order to maintain veld productivity at a high level as well as to maintain the vigour of the preferred species.
• Do not overstock at any time to avoid overgrazing.
• Eradicate invader plants.
• Periodically reassess the grazing and feed available for the next few months, and start planning in advance.
• Spread water points evenly.

F. Pests and diseases

Crops
• Fruit crop farmers should regularly scout for pests and diseases and contact the local agricultural office for advice on best control measures. Farmers should further implement phytosanitary measures.
• Irrigation farmers should monitor for pests and diseases especially those associated with humid and hot conditions.

Livestock
• Follow the vaccine routine and consult with the local veterinarian.

G. Veld fires

The provinces and farmers are advised to maintain firebreaks in all areas. An owner of the land who is obliged to prepare and maintain a firebreak must ensure that, with due regard to the weather, climate, terrain and vegetation of the area, the following is taken care of in terms of installing firebreaks (Chapter 4 of the National Veld and Forest Fire Act No. 101 of 1998):
• It has to be wide enough and long enough to have a reasonable chance of preventing a veld fire from spreading to or from neighbouring land.
• It does not cause soil erosion and
• It is reasonably free of inflammable material capable of carrying a veld fire across it.
• Firebreaks may be temporary or permanent.
• Firebreaks should consist of fire-resistant vegetation, inflammable materials, bare ground or a combination of these.
• Firebreaks must be located in such a way as to minimize risk to the resources being protected.
Early Warning Unit: CCDRR

- Erosion control measures must be installed at the firebreak.

**Firebreaks can be made through the following methods:**
- Mineral earth firebreak:
  - Through ploughing, grading, other earth movement.
- Use of herbicides.
- Use animals to overgraze specifically to minimise fuel.
- Strategic placement of burned areas,
  - Not to be done on days with fire hazard (windy and dry/hot).
- Plant fire resistant plants.
- Plant species selected for vegetated firebreaks must be non-invasive and capable of retarding the spread of fire.

**Maintaining firebreaks:**
- Mow, disk, or graze vegetative firebreaks to avoid a build-up of excess litter and to control weeds.
- Inspect all firebreaks for woody materials.
- Inspect firebreaks at least annually and rework bare ground firebreaks as necessary.
- Repair erosion control measures as necessary.
- Access by vehicles or people must also be controlled.
- Bare ground firebreaks, which are no longer needed must be stabilized i.e.
  - Sow grass.
  - Mulch.

**What to do when conditions favorable for veld fire are forecast:**
- Prohibit fires in the open air during periods of high fire hazard and establish a fire control committee.
- To control fires, an alarm system, firefighting teams, and beaters must be organized in advance and plans prepared.
- Livestock should be moved out of grazing land to a safe place.

**What to do during a veld fire:**
- Water is generally not available in sufficient quantities or at adequate pressure for the control of major fires; however, sand or other loose mineral soil material can be an effective method of control.
- Tree branches can be used to beat fire.

**H. Heat stress – bad for productivity**

- Signs of heat stress:
  Bunching in shade, high respiratory rates, open mouth breathing.
- What to do:
  - Offer shade.
  - Offer water- keep good quality water in front of animals.
  - Wet with sprinklers/fire hose.
  - Water ground.
  - Avoid overworking animals.
Control insects. Biting insects, such as flies can further stress livestock and interrupt their cooling. If pastures or buildings draw insects to livestock during times of extreme heat, provide proper insecticides or considering relocating your livestock.

**Poultry**
- Provide cool, clean, quality drinking water to your poultry. Water will help keep your birds cool.
- Always make sure your poultry is in a well-ventilated area in which there is nothing to obstruct the airflow.
- Provide feed during the coolest part of the day.
- Supplement drinking water with electrolytes.
- Reduce the number of birds kept in a house or in an area.
- Avoid excessive activity during the hottest part of the day.

**I. Wind Erosion**

**Wind erosion reduces agricultural production potential**

**Preventative measures for wind erosion**
- Do not burn vegetation.
- Keep vegetation cover – e.g. shrubs, grass, small trees; a cover crop may be used to increase organic material and increase soil structure.
- Plant permanent vegetation e.g. perennial grasses where possible.
- Maintain any remaining vegetative cover, e.g. maize stubble during winter wheat sowing, as it: Act as blanket, trap eroded particles –and reduce wind speed at ground level.
- Plant evergreen trees growing densely and perpendicular to typical wind direction during winter and spring as wind breaks.
- Increase water infiltration by correct management of soil – e.g. reduce frequency of plough and use minimum tillage.
- Mulch: to increase infiltration, reduce evaporation, and reduce raindrop impact as well as wind erosion.
- Construct retaining walls around gardens.
- Avoid soil compaction by roughening the soil surface
- Furrows and tillage ridges can trap loose soil
- Farm along contours as this reduces slope lengths
- Prevent over grazing.
- Practice conservation farming
- Maximize retention of crop residues.

**J. Severe thunderstorms/flash floods**

Building resilience:
- Identify resources/facilities within 50 km that can be utilized and can be of help during emergencies.
- Be sure to have legal and adequate markings to identify your livestock.
- Stay well informed about livestock in your possession and conduct an inventory after the event.
- Monitor television and local radio stations for information regarding severe storms/flash floods in your region.
- Identify natural or built areas/shelters where animals can be kept during such conditions
  - Sufficient height to be above water level,
  - Sheltered from strong winds and wetness,
- Restrict access to high-risk areas such as low lying fields close to streams.
- Store food in safe areas sheltered from wetness to be used after storms/flash floods.
- Keep pesticides and other chemicals in areas where water will not be contaminated during extreme rainfall/storm events.
- Inspect/repair farm dams before rainy season, and after each event.

The south-western parts of the country have received good rainfall during winter. Other parts of the country have reported a dry winter with generally reasonable to poor veld and livestock conditions. Planted winter crops are in good condition. The seasonal forecast anticipates above normal rainfall over most summer rainfall areas towards early to mid-summer with uncertainty in some areas of KwaZulu-Natal leaning towards below normal rainfall. Temperatures are expected to be above normal but early to mid-summer can expect cooler than normal temperatures over the central regions of the country.

With the current dry conditions in mind in most areas as well as the seasonal forecast, dryland farmers are advised to wait for sufficient moisture before planting. Areas that have been constantly experiencing dry conditions should prioritise drought tolerant cultivars. In regions that are in reasonable condition, farmers are advised to plant in line with the expected conditions i.e. in line with the seasonal forecast. However they should not expand planting land unnecessarily. In addition farmers should note that rainfall distribution remains a challenge, therefore not all areas might receive the anticipated above normal rainfall that is well distributed. As a result it is important for farmers to follow the weather forecast regularly so as to make informed decisions. Farmers using irrigation should comply with water restrictions in their areas.

Farmers are advised to keep livestock in balance with carrying capacity of the veld, and provide additional feed such as relevant licks. They should also provide enough water points on the farms as well as shelter during bad weather conditions. The veld remains dry especially in summer rainfall areas thereby maintaining the risk of veld fires. Therefore, maintenance of fire belts should be prioritized as well as adherence to veld fire warnings. Episodes of localized flooding resulting from thunderstorms are likely and preventative measures should be in place. As above normal temperatures are anticipated early in the summer, heat waves are also likely to occur and therefore measures to combat these should be in place. Farmers are encouraged to implement strategies provided in the early warning information issued.

The users are urged to continuously monitor, evaluate, report and attend to current Disaster Risk Reduction issues. It is very important and mandatory for farming communities to always implement disaster risk measures and maintain good farming practices.

The climate advisory should be disseminated widely. Users are advised to be on the look-out and act on the daily extreme weather warnings as well as the monthly advisory. Information sharing groups are encouraged especially among farming communities for sustainable development. In general, effective communication among all stakeholders in the sector will enhance effective implementation of risk reduction measures/early warning services. It is the responsibility of farmers to implement disaster risk measures.
The Disaster Management Act 2002, (Act No. 57 of 2002) urges Provinces, individuals and farmers, to assess and prevent or reduce the risk of disasters using early warning information. The current advisory can be accessed from the following websites: https://www.dalrrd.gov.za/.

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